# kelant

# S400 3D PRINTER
# PRODUCT MANUAL

## S400-3D打印机使用说明书

深圳市科蓝蒂科技有限责任公司

SHENZHEN SCIENCE AND TECHNILOGY CO., LTD.

# 感谢您选择科蓝蒂产品！

Thanks for choosing Kelant Combat S400 printer ！

[重要]请仔细阅读使用指南后再进行操作。
Please read the user manual carefully.

请登录科蓝蒂官网www.kelandi.cn获取更多产品资讯（包括机器/软件升级信息）。
Please visit www.kelandi.cn for firmware and slicing software updates .

技术支持邮箱：kelandi3d.foxmail.com
Email us : Alex-kelant@outlook.com for any supports or suggestions .

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# 一、Packing List

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| Resin 1PCS | Gloves 1PCS | Tools 1PCS | Build Plate 1PCS |
| pliers 1PCS | USB Disk 1PCS | Power adapter 1PCS | Manual 1PCS |

# 二、Precautions

Please contact our Customer service first if you have any questions after you received the printer

Keep the Kelant combat S400 and its accessories away from Children

Use printer at room temperature ,Avoid direct sunlight and dusting environment

Kelant Combat S400 must NOT be exposed to water and rain.

Wear gloves when handling the resin and avoid direct resin contact

Be cautious when using the scarper .Never direct the scraper towards your hand

Few accessories in Kelant Combat S400 printer are consumables and the warranty coverage may vary

Do not disassemble Kelant Combat S400 printer,Please contact technical support if you have any questions .

In case of emergency ,Please immediately cut off the power of Kelant Combat S400 printer and contact technical support .

# 三、 Assembling

1. Place Printer base on the desktop.

2. Mount the Z-axis to the main unit as shown.

(Materials required: 4 pcs screws )
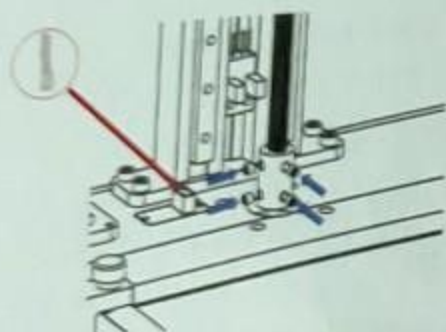
3. Lock the screw of the lead screw and the motor coupling and insert the upper limit switch plug.

4. Take out the four B1, B2, and B3 columns. The groove on the column is inserted into the main plate of the main unit in the direction of the red arrow (if you can't insert it, loosen the machine screw on the column) and lock the four columns. The machine screw shown in the partial enlarged view (there are screws in the hole)

B1 ( 2PCS )

B2 ( 1PCS )

B3 ( 1PCS )
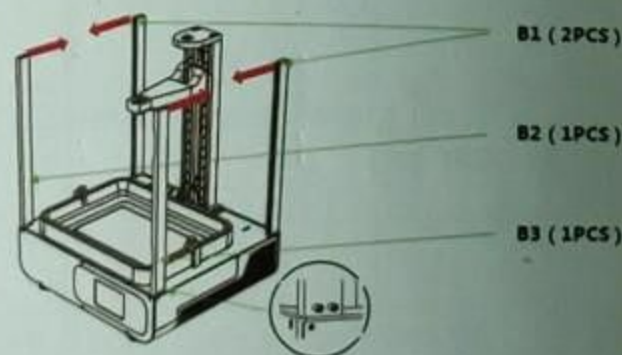
5. Remove the two acrylic A1, tear open the protective film on the acrylic, and insert the groove on the machine from top to bottom according to the blue arrow.

A1(2PCS)

6. Remove the three B4 and B5 columns. The groove on the B4 column is oriented in the direction shown by the red arrow. Use the four S1 screws to lock the three columns.

B4(1PCS)

B5(2PCS)
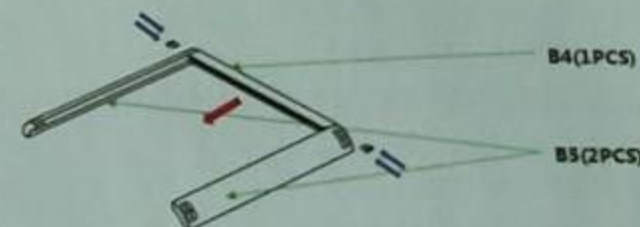
7. Remove the column B6, acrylic A2, and tear off the protective film of the acrylic A2. Insert the groove of the B6 in the direction of the red arrow and lock it with 4 S1 screws.

A2(1 PCS)

B6(1 PCS)

8. The assembled top cover is locked to the outer casing with 8 S1 screws (the side with the screw holes facing backwards)
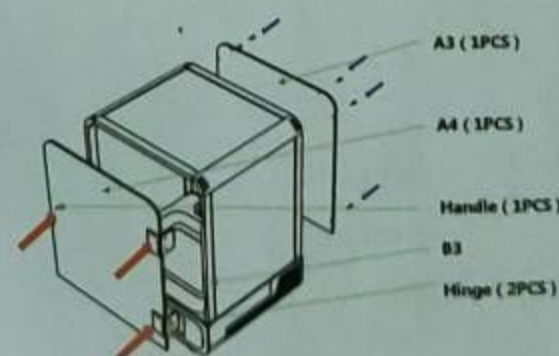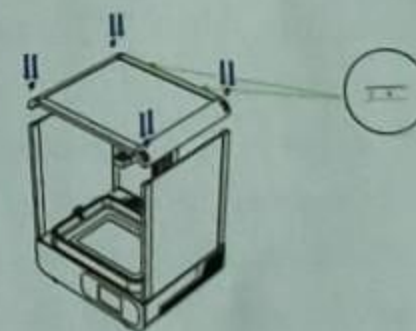
9. Remove the hardware kit fist, use one S2 screw to mount the handle on the A4 board, four S3 screws will hinge on the B3 column, and then use the six S4 screws to mount the acrylic A3.

A3 ( 1PCS )

A4 ( 1PCS )

Handle ( 1PCS )

B3

Hinge ( 2PCS )

10. To install the printing platform, first tighten the screws on the front and right sides of the Ball-joint, then screw the Ball-joint into the hole plate and tighten it. After tightening, loosen the screws on the front and right sides of the Ball-joint.
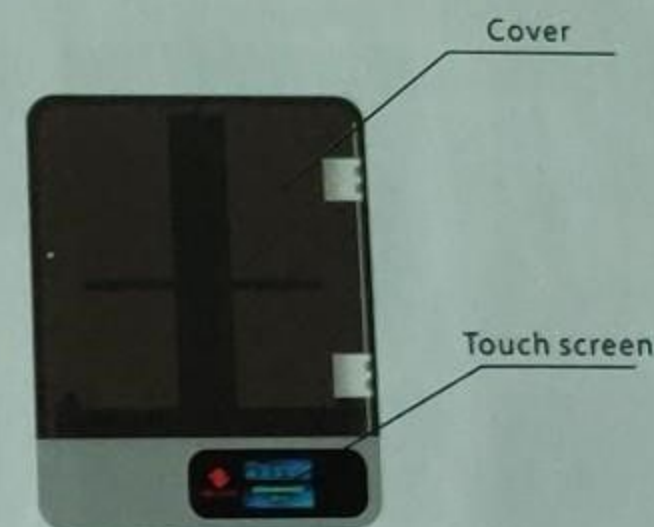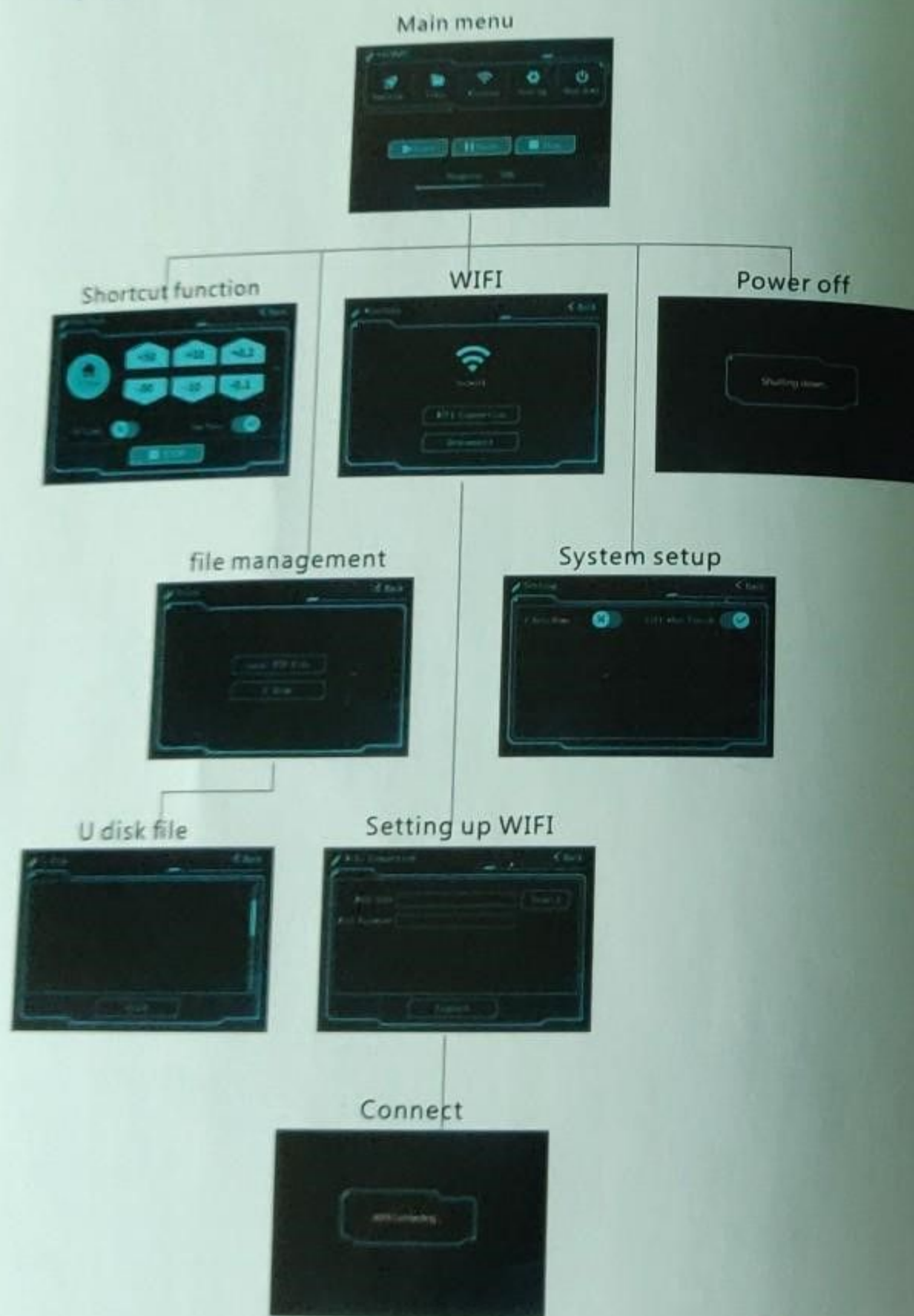
Front screw

Side screw

Plate
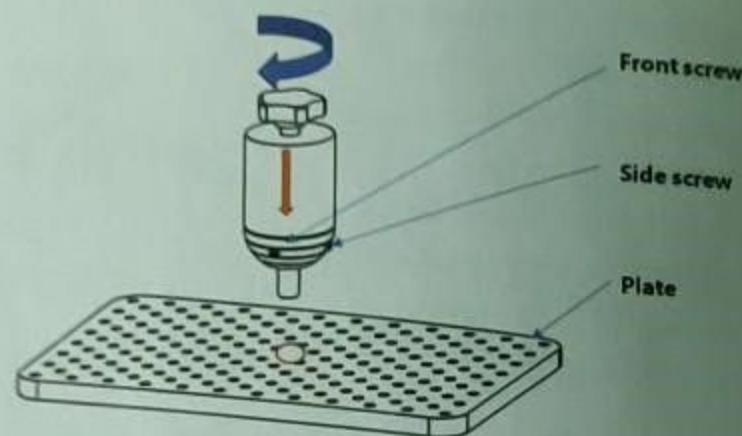
## Technical Specification

## 四、 Printing parameters

| System | Kelant |
|---|---|
| Operation | 3.5-inch touch screen |
| Slicing software | Kelant Slicer |
| Connectivity | USB Disk / Wifi |

### Specifications

| Technique | LCD Shadow Masking |
|---|---|
| Light Source | UV-LED ( Wavelength 405nm ) |
| XY Resolution | 75 microns ( 2560*1600 ) |
| Z axis accuracy | 25 microns |
| Suggested layer thickness | 0.025~0.2mm |
| Print speed | 30mm/h |
| Rated power | 144W |

### Physical Dimensions

| Dimension | 345mm ( L ) *300mm ( W ) *455mm ( H ) |
|---|---|
| Build Volume | 190mm ( L ) *120mm ( W ) *200mm ( H ) |
| Material | 405nm UV-resin |
| Weight | ~17kg |

## 五、 Printer Overview

Cover

Touch screen
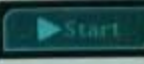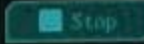
Lead screw

Build Plate

Cap

Resin Vat

Front screw

Resin vat

Power port

Power

USB port

## 六、 Touch screen Introduction

Main menu



Shortcut function

WIFI

Power off

file management

System setup

U disk file

Setting up WIFI

Connect
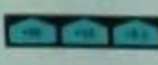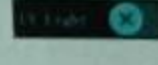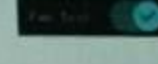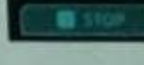
## 七、 Touch screen functions introduction
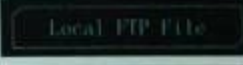
### System Menu

| | |
|---|---|
| 🚀 | Quick function |
| 📁 | Document management |
| 📶 | WIFI |
| ⚙️ | System settings |
| ⏻ | Shut down system |
| ▶ Start | Continue printing |
| ⏸ Pause | Pause printing |
| ⏹ Stop | Stop printing |
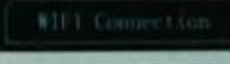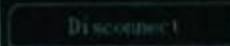
### Quick function

| | |
|---|---|
| 🏠 | "Home" Z axis |
| | Rise the distance of the Z axis |
| | Drop the distance of the Z axis |
| | LCD display test |
| | Turn the fan on/off |
| ⏹ STOP | Emergency stop Z-axis motor motion |

### Document management

| | |
|---|---|
| Local FTP File | Print from the system tray |
| U Disk | Print from a USB flash drive |

### Set up WIFI connection

| | |
|---|---|
| WIFI Connection | Search wireless WIFI |
| Disconnect | Connect wifi |

### System settings

| | |
|---|---|
| Z Auto Home ❌ | Z axis auto zero must be turned on before printing |
| Lift when Finish ✅ | Z-axis is automatically raised after printing |

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## 八、Leveling

1. Remove the resin Vat and loosen the screws on the front and right sides of the ball-joint to allow the ball-joint to move completely freely. as the picture shows.
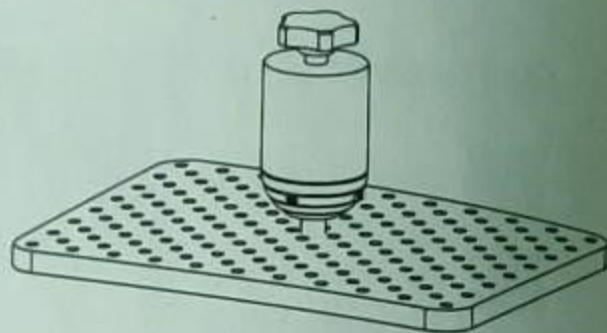
2. Check and keep 2K LCD screen and platform clean  No resin and no impurities (foreign matter can be wiped with alcohol). 3.Turn on the machine's power switch.

3. Put an A4 paper on the 2K LCD screen, install the platform to the platform bracket, and tighten the black platform fixing knob (as shown).
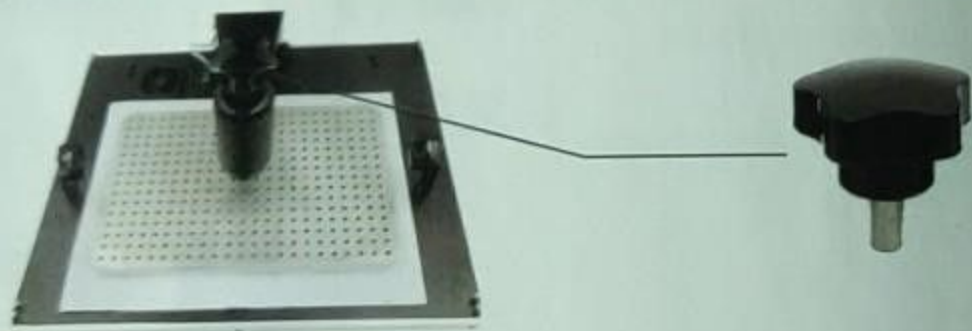
4. As shown in the figure, click "Quick Function" → "Z-axis to zero" on the touch screen → wait for the Z-axis to descend and stop automatically.

5. Press the top of the platform with your hand, so that the four corners of the platform are evenly attached to the 2K LCD screen. First tighten the screw on the front of the pan to the lock, then tighten the screw on the right side of the pan to tighten, and twitch the four corners of the A4 paper. The resistance is even and uniform, otherwise the steps 1, 2, 3, 4, and 5 are repeated.

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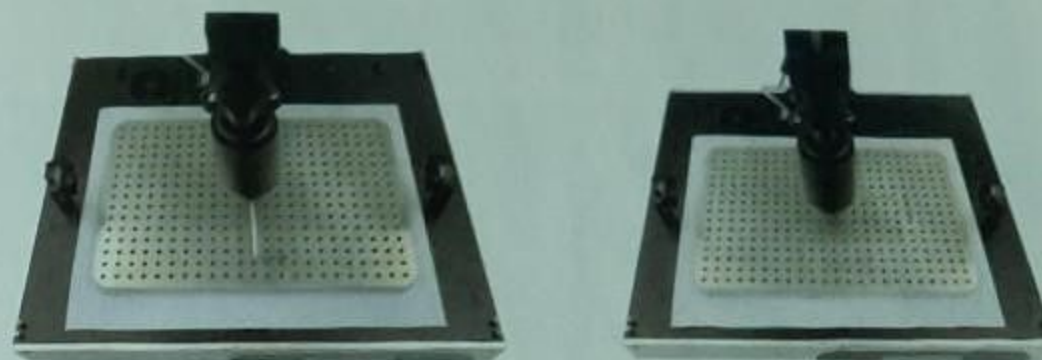
6. Finally, click "Quick Function" → "+50" on the touch screen again, move up the Z axis height, then return to zero, wait for the zero to twitch and then draw A4 paper to see if there is obvious resistance, whichever is greater. End adjustment of the Z-axis height.

7. Upward platform about 100mm, check whether the LCD screen works normally: as shown in the figure, press the touch screen "quick function" → "turn on the UV light switch", if the 2K forming screen can display the grid completely, it means the LCD screen works normally. ,as the picture shows.

8. Install the resin Vat : Push the resin Vat into the bottom plate and align it with the groove and trough on the middle plate. Finally, tighten the two thumbscrews as shown.

Vat cap

Push into the trough

10
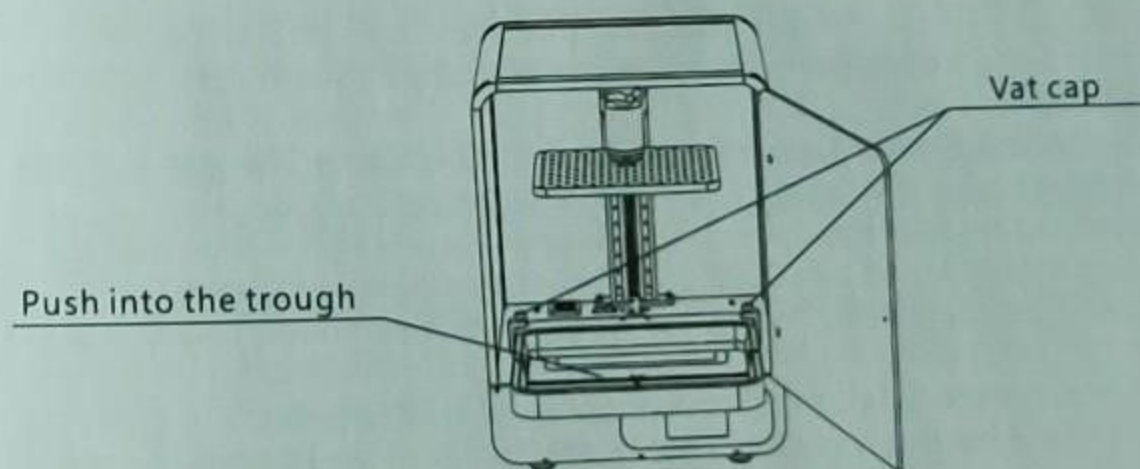
# 九、FAQ and Machine maintenance

The slicing software is placed in the KLD Slicer folder of the USB flash drive and the slicing software is run (double-click the software icon). Click "Load Model" → "Select File" → "Open File" on the interface to import (.STL file). Click the model with the left mouse button and change the perspective, angle, size and position of the model by operating the options on the right side of the software interface.
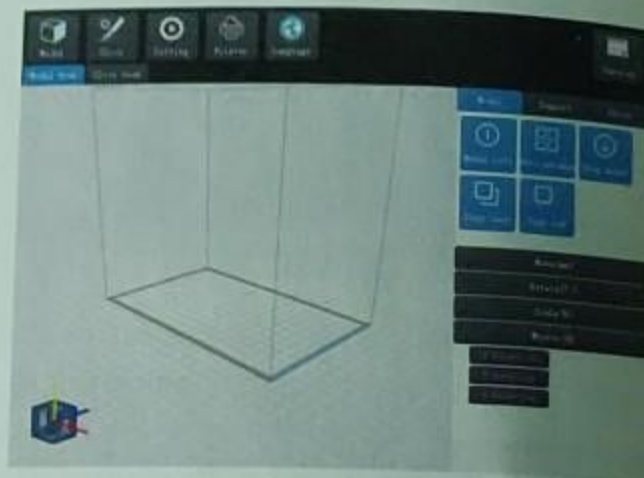
Other operations:

(1) Click the model with the left mouse button and drag the mouse to move the position of the model on the platform.

(2) Roll the middle mouse wheel to zoom the angle of view.

(3) Left mouse button click on the blank space, drag the mouse to rotate the angle of view.

( 4 ) Click Language in the menu bar to switch languages.

## Slicer parameters

Slice setting

If using factory resin, please select the precision to be printed (eg KLD-0.05). If using a third-party resin, please refer to the following suggestions.

Slice setting

Layer thickness (mm): The setting range is: 0.01~0.2mm. The thicker of the layer thickness is, the longer of the single layer exposure time is.

Single layer exposure time (ms): The setting range is 4000~8000ms. The exposure time should be set according to the complexity of each layer thickness and detail (the thicker the single layer, the longer the exposure time).

Bottom exposure time (ms): The setting range is 30,000~60000ms. The longer of the bottom exposure time is, the harder of the bottom and the

platform is.

Exposure delay (ms): The setting range is 1000~6000ms. Wait for the resin to reflow before printing. The higher of the viscosity of the resin is, the longer the time is.

Number of bottom layers (n): The setting range is 3~6 layers.

Advanced settings

Bottom lifting speed (mm/min): The recommended value is 30,lifting speed of the bottom layer.

Lifting height 1 (mm): The recommended value is 3, the first draft lift height.

Lifting speed 1 (mm/min): The recommended value is 80, the first draft lift speed.

Lifting height 2 (mm): Recommended value 4, second lifting height. Dynamic speed.

Z-axis lift (mm) after printing: The recommended value is 30, and the distance of the Z-axis is automatically raised after printing is completed.

Anti-aliasing: After opening, the surface of the model is blurred, reducing the texture and making the printing smoother.

Lifting speed 2 (mm/min): Recommended value 300, second lifting speed.

Falling speed (mm/min): The recommended value is 300, and the Z-axis is decreasing.
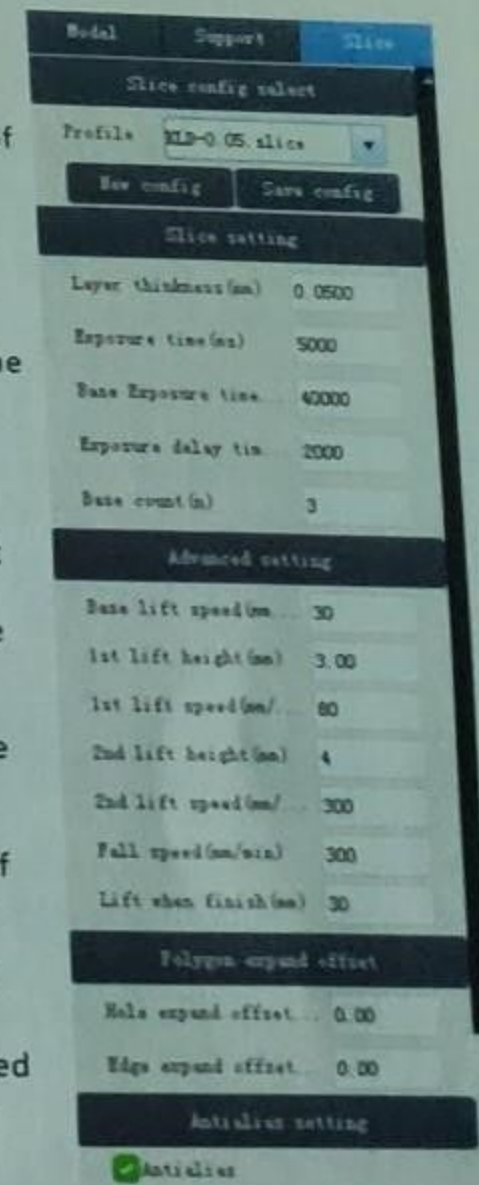
1. S400 supports third-party slicing software, and the acceptable slice format is "ZIP".

2. If using third-party slicing software, the software slice thickness is 0.05, the corresponding layer thickness must be set on the printer, for example: 0.05=50um, 0.1=100um.

3. When selecting the .ZIP suffix format file to print, prompt to set the compressed package print format after selecting the file on the touch screen.

4. If using factory resin, please refer to the following settings. Third-party resin should be modified according to the actual parameter settings.

Slice thickness: 0.05 or (0.1)
Lifting distance 1:3
Exposure time: 5000 or (5500) Lifting speed 1:80
Exposure delay: 2000 lift distance 2:4
Raised after completion: 30 Lifting speed 2:300
Bottom exposure time: 40000 Falling speed: 300
Number of bottom layers: 3

## Support

The type of support can
be divided into Fine, medium and thick, Each choice has
a corresponding
Parameter setting.

Fine: Contact area between the Support and model is
small .easy to Remove the support .

Thick : Support contact with the model is large --solid .

It is recommended to use the "medium" first ,and
use the default Setting .

Raft : Add the raft will make the Bottom stick better
to the build Plate (but using more material),The
Parameter could be changed according To your own needs.

## Save model

After the setting is completed, click the "Slice" , enter the file name, save
(save it in the U disk) and slice it; after the slice is completed, click "Slice
View" to view the path , parameters , and so on when the model is printed
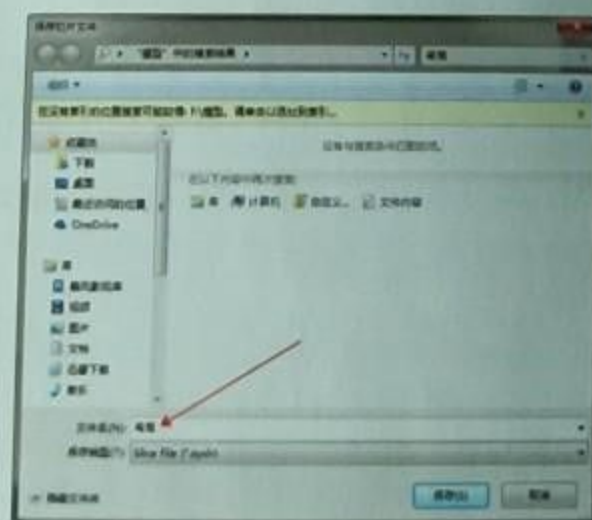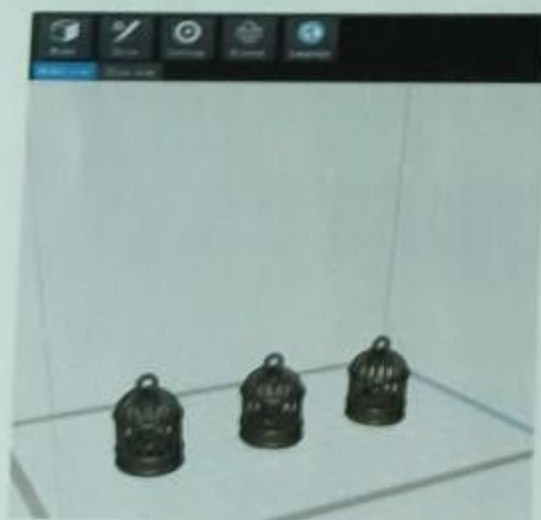
# 十、First print instructions

Before printing, to minimize the first time fail , ( 1 ) please ensure Z-axis
works fine  ( 2 ) The Build Plate is well leveled  ( 3 ) UV light is function
properly .

## 1、Print

Please insert USB disk into printer USB port or connected wifi ,then wear
gloves,slowly pour the resin to resin VAT until it reaches 1/3 volume of it .
take off gloves ,select test file or your own file ,as photo shows, and start
printing , During printing . avoid direct sun light and keep flat avoid
shaking .

## 2、Handling models and residues

After printing finished , awaiting the resin stop dropping from the build
plate,and then unscrew and remove the build plate . as photo shows , the
model could be removed by scraper carefully .the model should be
washed by ethanol 95% concentration .the printed model may need post
curing to achieve better hardness by direct sunlight or UV curing box .

(Important)Inevitably , in case of incomplete
curing or failed prints .there might be some
resin residues left in the resin VAT , then please
filter by a funnel and store the resin in a sealer
container, for the residues left in the resin VAT
or on the plate plate ,please use paper towel or
plastic scraper to carefully get rid of that  .

# 十一、Summary of common problems and maintenance of the machine

## 1、Nothing is printed

a.The first reason, because the platform  is not leveled well , the printing
platform is still too high, causing the model to solidify on the FEP film at

the bottom of the resin tank, so no model is on the platform after printing is completed. The solution is to use 95 degree alcohol clean printing platform and remove the resin tank ( use a yellow plastic scraper to clean the solids stained on the FEP film), and then re-leveling according to the leveling step.

b.The second reason is that the bottom area is small and no support is added, so that the printing platform cannot be attached, and the bottom exposure time is insufficient. Solution: Add support or select a place with a large contact surface as the bottom surface.

c.Third reason , a large solid model is printed, It is cured each layer on resin Vat and at Build plate. Solution: Increase the bottom exposure time (60-100 seconds) and bottom layers (3-10 layers).

2, print the model cracked, hole or only a base
Because the curing time of the common layer is not enough.
The solution is to increase the normal layer curing time by 1 to 3 seconds.
There is also a case where the screen damage causes the liquid crystal to leak and the model in the liquid crystal area is not formed (use the shortcut function - turn on the UV lamp - see if there is a grid full display)

3.Liquid resin on the screen after printing is complete
a. The FEP film is broken and the resin is leaked. Solution: Replace the new FEP film
b. During the process of cleaning the resin Vat or removing the resin Vat, resin drops on the surface of the LCD screen. Solution: Wipe the LCD screen with 95% alcohol and wipe the resin

# 2、Machine maintenance

1. if Z axis make noise sound ,please apply lubricant to Z lead screw
2. Do not use sharp objects to scrape off the residues on the FEP film
3. Be carefully when remove the Build plate , do not let it fall into LCD screen .
4. Do not let the resin in the resin VAT for over two days if not using it , please filter and store the resin properly .
5. After printing ,Please clean up the build plate (wipe clean with paper towel or wash with alcohol )and ensure no residues left before next print .
6. If outside of the printer is stained with resin , use alcohol to wipe clean .
7. To switch different resin color , please clean original resin VAT first.
If you have any questions Please contact our customer service .
Kelandi3d@foxmail.com
Google Forum : https://www.facebook.com/groups/1014915198707429/

## 一、装箱清单

| | |
|---|---|
| 科蓝蒂S400主机1PCS | Z轴 1PCS |

| | | | |
|---|---|---|---|
| 料槽 1PCS | 把手 1PCS | 铰链 2PCS | 亚克力 5PCS |

| | | | |
|---|---|---|---|
| 罩子柱子 8PCS | 云台 1PCS | 螺丝 5PCS | 塑料铲刀 1PCS |

| | | | |
|---|---|---|---|
| 树脂 1PCS | 手套 1PCS | 螺丝刀 1PCS | 平台 1PCS |

| | | | |
|---|---|---|---|
| 斜口钳 1PCS | U盘 1PCS | 电源适配1PCS | 说明书 1PCS |